In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims. Canceled claims have been canceled without prejudice.

1. (Currently amended) A kit comprising:

a first article having a surface; and

a peptide sequence immobilized relative to or adapted to be immobilized relative to the surface, the peptide sequence ~~including~~ comprising a portion of a cell surface receptor, ~~wherein the full length form comprises an~~ in which an interchain binding region has been removed to the extent necessary to prevent self-aggregation of the peptide, ~~that~~ which interacts with an activating ligand ~~such as a growth factor~~ to promote cell proliferation~~, the portion including enough of the cell surface receptor to interact with the activating ligand and the portion free of interchain binding region to the extent necessary to prevent spontaneous binding between portions; and a candidate drug for affecting the ability of the peptide sequence to bind to other identical peptide sequences in the presence of the activating ligand~~.

2. (Currently amended) ~~A~~ The kit as in claim 1, further comprising a second article having a surface and the peptide sequence immobilized relative to or adapted to be immobilized relative to the surface of the second article.

3. (Currently amended) ~~A~~ The kit as in claim 1, wherein the peptide sequence is MUC1 Growth Factor Receptor (MGFR).

4. (Withdrawn) A method comprising: providing a peptide including a portion of a cell surface receptor that interacts with an activating ligand such as a growth factor to promote cell proliferation, the portion including enough of the cell surface receptor to interact with the activating ligand and the portion free of interchain binding region to the extent necessary to prevent spontaneous binding between portions; exposing the peptide to a candidate drug for affecting the ability of the activating ligand to interact with the peptide, and to the activating ligand; and determining the ability of the candidate drug to prevent interaction of the activating ligand with the peptide.

5. (Withdrawn) A method as in claim 4, comprising determining the ability of the candidate drug to prevent interaction of the peptide with other proteins or peptides.

6. (Withdrawn) A method as in claim 4, comprising providing a first article having a surface and a plurality of the peptides immobilized relative to or adapted to be immobilized relative to the surface; exposing the peptides and the surface of the first article to the candidate drug and at least one activating ligand; and determining the ability of the candidate drug to prevent interaction of the activating ligand with the peptide.

7. (Withdrawn) A method as in claim 4, comprising providing a first article having a surface, a second article having a surface, and a plurality of the peptides immobilized relative to or adapted to be immobilized relative to the surfaces of the first and second articles; exposing the peptides and the surfaces of the first and second articles to the candidate drug and at least one activating ligand; and determining immobilization of the first and second articles relative to each other.

8. (Withdrawn) A method as in claim 4, wherein the step of exposing the peptides to the candidate drug and at least one activating ligand comprises exposing the peptide and the candidate drug to one or both of cell lysate and cell supernatant containing the activating ligand.

9. (Withdrawn)A method as in claim 4, wherein the peptide sequence is the primary sequence of th eMUC1 growth factor receptor (PSMGFR).

10-47. (Canceled)

48. (Withdrawn) A kit comprising: a species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region; and a signaling entity immobilized relative to or adapted to be immobilized relative to the species.

49. (Withdrawn) A kit as in claim 48, wherein the cell surface receptor is MUC1.

50. (Withdrawn) The kit as in claim 48, wherein the signaling entity is a colloid particle.

51. (Withdrawn) The kit as in claim 48, wherein the signaling entity is not a colloid particle.

52. (Withdrawn) The kit particle as in claim 48, further comprising a colloid particle, wherein the signaling entity is attached to the colloid particle.

53. (Withdrawn) The kit as in claim 48, wherein the species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a protein of about 17 kD.

54. (Withdrawn) The kit as in claim 49, wherein the species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a protein of about 23 kD.

55. (Withdrawn) The kit as in claim 49, wherein the species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a protein of about 35 kD

56. (Withdrawn) The kit as in claim 49, wherein the species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains sequences derived from the protein 14-3-3

57. (Withdrawn) The kit as in claim 49, wherein the portion comprises 14-3-3.

58. (Withdrawn) The kit as in claim 49, wherein the portion comprises cathepsin D.

59. (Withdrawn) The kit as in claim 49, wherein the portion comprises NM23.

60. (Withdrawn) The kit as in claim 49, wherein the portion comprises Human annexin V.

61. (Withdrawn) The kit as in claim 49, wherein the species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains at least one sequence derived from beta-lipotropin.

62. (Withdrawn) The kit as in claim 49, wherein the species able to bind to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a cleavage product of proopiomelanocortin.

63. (Withdrawn) A kit comprising: a species able to bind to a portion of a cell surface receptor that includes the interchain binding region; and a signaling entity immobilized relative to or adapted to be immobilized relative to the species.

64. (Withdrawn) A kit as in claim 63, wherein the cell surface receptor is MUC1.

65. (Withdrawn) The kit as in claim 63, wherein the signaling entity is a colloid particle.

66. (Withdrawn) The kit as in claim 63, wherein the signaling entity is not a colloid particle.

67. (Withdrawn) The colloid particle as in claim 63, further comprising a colloid particle, wherein the signaling entity is attached to the colloid particle.

68. (Withdrawn) A peptide species comprising: at least a fragment of a sequence that corresponds to that portion of a cell surface receptor that interacts with an activating ligand such as a growth factor to promote cell proliferation, the portion being detached from any cell; and an affinity tag.

69. (Withdrawn) A peptide species as in claim 68, wherein the affinity tag is connected to the fragment.

70. (Withdrawn) A peptide species as in claim 68, wherein the affinity tag defines a portion of a continuous amino acid sequence that includes both the fragment and the affinity tag.

71. (Withdrawn) The species of claim 68, wherein the affinity tag is a polyamino acid tag.

72. (Withdrawn) The species of claim 68, wherein the affinity tag is a polyhistidine tag.

73. (Withdrawn) The species of claim 68, wherein the affinity tag is a GST tag.

74. (Withdrawn) The species of claim 68, wherein the affinity tag is biotin.

75. (Withdrawn) The species of claim 68, wherein the affinity tag is Thioredoxin.

76. (Withdrawn) The species of claim 68, wherein the affinity tag is selected to bind to a species immobilized with respect to the surface of an article.

77. (Withdrawn) The species of claim 68, further comprising an article having a surface, and a species able to capture the affinity tag immobilized with respect to the surface.

78. (Withdrawn) The species of claim 68, wherein the article is a particle.

79. (Withdrawn) The species of claim 68, wherein the affinity tag is fastened to the C-terminus of the portion of the receptor.

80. (Withdrawn) The species of claim 68, wherein the cell surface receptor is MUC1.

81. (Withdrawn) The species of claim 68, wherein the cell surface receptor portion comprises 12 or more contiguous amino acids in the sequence
GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPSAQSGA (SEQ ID NO: 7)

82. (Withdrawn) A peptide species as in claim 68, wherein the fragment comprises at least a portion of PSMGFR.

83. (Withdrawn) A peptide species as in claim 68, wherein the fragment comprises PSMGFR.

84. (Withdrawn) A peptide species as in claim 68, wherein the fragment comprises at least a fragment of the sequence that corresponds to that portion of MUC1 that interacts with an activating ligand such as a growth factor to promote cell proliferation in association with MUC1-dependent tumorigenesis.

85. (Withdrawn) A peptide species as in claim 68, wherein the fragment comprises enough of the sequence that corresponds to that portion of MUC1 that remains attached to the cell surface after shedding of the cell surface receptor interchain binding region in association with MUC1-dependent tumorigenesis such that a biomolecule that interacts with that portion of MUC1 that remains attached to the cell surface after shedding of the cell surface receptor interchain binding region in association with MUC1-dependent tumorigenesis interacts with the fragment.

86. (Withdrawn) A kit comprising: a particle; and at least a fragment of the sequence that corresponds to that portion of a cell surface receptor that interacts with an activating ligand such as a growth factor to promote cell proliferation, the fragment being detached from any cell, fastened to or adapted to be fastened to the particle.

87. (Withdrawn) The kit of claim 86, wherein the cell surface receptor is MUC1.

88. (Withdrawn) A kit comprising: an article having a surface; and a biomolecule that binds to a portion of a cell surface receptor that interacts with an activating ligand such as a growth factor to promote cell proliferation, the biomolecule being fastened to or adapted to be fastened to the surface of the article.

89. (Withdrawn) The kit of claim 88, wherein the article comprises a particle.

90. (Withdrawn) The kit of claim 88, wherein the cell surface receptor is MUC1.

91. (Withdrawn) The kit of claim 88, further comprising: a second particle; and a portion of a

cell surface receptor that remains attached to the cell surface after shedding of the cell surface receptor interchain binding region, the portion being detached from any cell, fastened to or adapted to be fastened to the second particle.

92. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a protein of about 17 kD.

93. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a protein of about 23 kD.

94. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a protein of about 35 kD.

95. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains sequences derived from the protein 14-3-3.

96. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains sequences derived from Cathepsin D.

97. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains sequences derived from NM23.

98. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains sequences derived from human annexin V.

99. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region contains at least one sequence derived from beta-lipotropin.

100. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is a cleavage product of proopiomelanocortin.

101. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region is selected from the group which includes calcimycin, fusaric acid, L-α-methyl-dopa, and etomoxir.

102. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region comprises calcimycin.

103. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region comprises fusaric acid.

104. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region comprises L-α-methyl-dopa.

105. (Withdrawn) The kit as in claim 88, wherein the biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region comprises etomoxir.

106. (Withdrawn) The composition of claim 88, wherein the biomolecule is derived from a cell

line selected from the group consisting of HTB-133, CRL-1504, a nd CRL-1500.

107. (Withdrawn) A method comprising: exposing a ligand capable of binding with a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region, and an agent capable of blocking said binding, to a candidate drug for disruption of interaction between the ligand and the agent; and determining disruption of the interaction by the candidate drug.

108. (Withdrawn) A method comprising: exposing a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region which is capable of binding with a ligand, and an agent capable of blocking said binding, to a candidate drug for disruption of interaction between the portion and the agent; and determining disruption of the interaction by the candidate drug.

109. (Withdrawn) A method comprising: exposing a synthetic drug, and a biological target of the synthetic drug, to a candidate drug which may interact with the biological target to a degree greater than the interaction between the synthetic drug and the target; and determining disruption of the interaction by the candidate drug.

110. (Withdrawn) A method as in claim 109, wherein the synthetic drug is a derivative of fusaric acid.

111. (Withdrawn) A method as in claim 109, wherein the synthetic drug is a derivative of L-α-methyl-dopa.

112. (Withdrawn) A method as in claim 109, wherein the synthetic drug is a derivative of etomoxir.

113-148. (Canceled)

149. (Withdrawn) A method comprising: exposing a composition selected among calcimycin,

butylindazone, NS1619, fusaric acid, L-α-methyl-dopa, and etomoxir, and a biomolecule that binds to a portion of a cell surface receptor that remains attached to the cell surface after shedding of a cell surface receptor interchain binding region, to a candidate drug which may interfere with interaction between the composition and the biomolecule; and determining disruption of the interaction by the candidate drug.

150-157. (Canceled)

158. (Withdrawn) A method comprising: determining an amount of cleavage of a cell surface receptor interchain binding region from a cell surface and/or determining an amount of a portion of the cell surface receptor remaining at the surface resulting from such cleavage and accessible to interaction with external agents; and evaluating indication of cancer or potential for cancer based upon the determining step.

159. (Withdrawn) A method as in claim 158, wherein the cell surface receptor is MUC1.

160. (Withdrawn) A method as in claim 158, comprising diagnosing cancer in a subject by determining an amount of shed cell surface receptor interchain binding region in a subject sample and/or determining an amount of MGFR at a cell surface accessible to interaction with external agents; and evaluating indication of cancer or potential for cancer based upon the determining step.

161. (Withdrawn) A method as in claim 158, wherein the evaluating step comprises correlating the amount in a sample to an amount in a control as an indication of cancer or potential for cancer.

162. (Withdrawn) A method as in claim 158, comprising: determining an amount of cell surface receptor interchain binding region at the surface of a cell from a subject and/or determining an amount of MGFR at a cell surface accessible to interaction with external agents; and evaluating indication of cancer or potential for cancer based upon the determining step.

163. (Withdrawn) The method of claim 158, wherein the interchain binding region comprises a contiguous amino acid sequence of at least 12 amino acids from the sequence GFLGLSNIKFRPGSVVVQLTLAFRE (SEQ ID NO:8).

164. (Withdrawn) The method of claim 158, wherein the interchain binding region comprises a contiguous amino acid sequence of about 12 to 18 amino acids, within the region of the human MUC1 receptor amino acids 507 through 549 (refers to Spicer et al sequence--corresponds to amino acids 1067 through 1100 of Genbank accession # PI5941, PID G547937).

165. (Withdrawn) The method of claim 158, wherein the interchain binding region comprises a contiguous amino acid sequence of about 12 to 18 amino acids, within the region of the human MUC1 receptor amino acids 525 through 549 (refers to Spicer et al sequence-corresponds to amino acids 1085 through 1109 of Genbank accession # PI5941, PID G547937).

166. (Withdrawn) The method of claim 160, wherein the sample is a fluid sample.

167. (Withdrawn) The method of claim 160, wherein the sample is blood.

168. (Withdrawn) The method of claim 160, wherein the sample is a tissue sample.

169. (Withdrawn) The method of claim 160, wherein the sample is a proliferating cell line derived from a subject's cells.

170. (Withdrawn) The method of claim 158, wherein the cancer is characterized by expression of MUC1.

171. (Withdrawn) The method of claim 158, wherein the amount of interchain binding region is determined by a method selected from the group consisting of MALDI, western blotting, PCR, LCR, rtPCR, cycling probe technology, gel electrophoresis, or antibody-based assay, magnetic cell sorting, fluorescence activated cell sorting, bead-based assays or an ELISA assay.

172. (Withdrawn) The method of claim 158, wherein the amount of interchain binding region is determined by an aggregation assay.

173. (Withdrawn) The method of claim 158, wherein the amount of interchain binding region is determined by a colloid-based method such as colloid-colloid or colloid-bead assay.

174. (Withdrawn) The method of claim 158, wherein the sample is selected from the group consisting of: a needle biopsy, a tissue specimen, a tissue surface in an intraoperative procedure, and a tissue surface or cellular solution in a minimally invasive procedure such as a laparoscopy.

175. (Withdrawn) A method comprising: determining a site of cleavage of a cell surface receptor in a sample from a subject; and evaluating an indication of cancer or potential for cancer based upon the determining step.

176. (Withdrawn) The method of claim 175, wherein the cell surface receptor is MUC1.

177. (Withdrawn) The method of claim 175, wherein the sample is selected from the group consisting of: a needle biopsy, a tissue specimen, a tissue surface in an intraoperative procedure, and a tissue surface or cellular solution in a minimally invasive procedure such as a laparoscopy.

178. (Withdrawn) The method of claim 175, wherein the sample is a fluid sample.

179. (Withdrawn) The method of claim 175, wherein the sample is blood.

180. (Withdrawn) The method of claim 175, wherein the sample is a tissue sample.

181. (Withdrawn) The method of claim 175, wherein the cancer is selected from the group consisting of MUC1 positive breast, prostate, lung, ovarian, colorectal, and brain cancer.

182. (Withdrawn) A method as in claim 175, wherein the cancer is characterized by the expression of MUC1.

183. (Withdrawn) The method of claim 175, wherein the site of cleavage is determined by a method selected from the group consisting of MALDI, western blotting, PCR, LCR, rtPCR, cycling probe technology, gel electrophoresis, or antibody-based assay, magnetic cell sorting, fluorescence activated cell sorting, bead-based assays or an ELISA assay.

184. (Withdrawn) The method of claim 175, wherein the amount of interchain binding region is determined by a colloid-based method such as colloid-colloid or colloid-bead assay.

185. (Withdrawn) A method of determining a cleavage site of a cell surface comprising: contacting a cell with an agent that binds specifically to one potential cell surface receptor cleavage site and another agent that binds specifically to another potential cell surface receptor cleavage site; and comparing the ratio of binding of the two agents to the cell surface.

186. (Withdrawn) The method of claim 185, wherein the surface cell receptor is MUC1.

187. (Withdrawn) A method of diagnosing a physiological state indicative of cancer or potential for cancer, comprising determining a specific cleavage state of MUC1 distinguishable from a different cleavage state of MUC1.

188. (Withdrawn) A method comprising: determining a first amount of cleavage of a cell surface receptor interchain binding region from a cell surface of a sample from a subject; determining a second amount of cleavage of a cell surface receptor interchain binding region from a cell surface of a sample from the subject; comparing the first amount to the second amount.

189. (Withdrawn) A method as in claim 188, comprising comparing the first amount to the second amount as an indication of progression of and/or effectiveness of treatment for cancer.

190. (Withdrawn) A method as in claim 188, comprising comparing the first amount to the second amount as an indication for administration of an agent for prevention of cancer.

191. (Withdrawn) A method as in claim 188, wherein the subject is undergoing treatment for cancer, the method comprising comparing the first amount to the second amount as an indication of effectiveness of the treatment.

192. (Withdrawn) A method as in claim 188, wherein the cell surface receptor is MUC1.

193. (Withdrawn) The method of claim 192, wherein the interchain binding region comprises a contiguous amino acid sequence of at least 12 amino acids from the sequence GFLGLSNIKFRPGSVVVQLTLAFRE (SEQ ID NO:8).

194. (Withdrawn) The method of claim 192, wherein the interchain binding region comprises a contiguous amino acid sequence of about 12 to 18 amino acids, within the region of the human MUC1 receptor amino acids 507 through 549 (refers to Spicer et al sequence--corresponds to amino acids 1067 through 1100 of Genbank accession # PI5941, PID G547937).

195. (Withdrawn) The method of claim 188, wherein the interchain binding region comprises a contiguous amino acid sequence of about 12 to 18 amino acids, within the region of the human MUC1 receptor amino acids 525 through 549 (refers to Spicer et al sequence-corresponds to amino acids 1085 through 1109 of Genbank accession # PI5941, PID G547937).

196. (Withdrawn) The method of claim 188, wherein the sample is a fluid sample.

197. (Withdrawn) The method of claim 188, wherein the sample is blood.

198. (Withdrawn) The method of claim 188, wherein the sample is a tissue sample.

199. (Withdrawn) The method of claim 188, wherein the cancer is selected from the group consisting of MUC1 positive breast, prostate, lung, ovarian, colorectal, and brain cancer.

200. (Withdrawn) The method of claim 188, wherein the sample is a proliferating cell line derived from a patient's cells.

201. (Withdrawn) The method of claim 188, wherein the amount of interchain binding region is determined by a method selected from the group consisting of MALDI, western blotting, PCR, LCR, rtPCR, cycling probe technology, gel electrophoresis, or antibody-based assay, magnetic cell sorting, fluorescence activated cell sorting, bead-based assays or an ELISA assay.

202. (Withdrawn) The method of claim 188, wherein the amount of interchain binding region is determined by an aggregation assay.

203. (Withdrawn) The method of claim 188, wherein the amount of interchain binding region is determined by a colloid-based method such as colloid-colloid or colloid-bead assay.

204. (Withdrawn) The method of claim 188, wherein the sample is selected from the group consisting of: a needle biopsy, a tissue specimen, a tissue surface in an intraoperative procedure, and a tissue surface or cellular solution in a minimally invasive procedure such as a laparoscopy.

205. (Withdrawn) The method of claim 188, wherein the amount of interchain binding region is determined by a colloid-based method such as colloid-colloid or colloid-bead assay.

206. (Withdrawn) The method of claim 188, wherein the sample is selected from the group consisting of: a needle biopsy, a tissue specimen, a tissue surface in an intraoperative procedure, and a tissue surface or cellular solution in a minimally invasive procedure such as a laparoscopy.

207. (Withdrawn) A method as in claim 188, comprising determining a first amount of a cell surface receptor interchain binding region at the surface of a cell in a sample from a subject, determining a second amount of a cell surface receptor interchain binding region at the surface of a cell in a sample from the subject, comparing the first amount to the second amount.

208. (Withdrawn) A method as in claim 188, comprising determining a first amount of a shed cell surface receptor interchain binding region in a sample from a subject, determining a second

amount of a shed cell surface receptor interchain binding region in a sample from the subject, comparing the first amount to the second amount.

209. (Withdrawn) A method of diagnosing MUC1 positive breast, prostate, lung, ovarian, colorectal, and/or brain cancer or the risk of such cancer in a subject and treating the subject to reduce the risk of or progression of such cancer, comprising:

determining an amount of cleavage of a MUC1 cell surface receptor interchain binding region from a cell surface and/or determining an amount of a portion of the MUC1 cell surface receptor remaining at the cell surface resulting from such cleavage and accessible to interaction with external agents;

evaluating indication of MUC1 positive breast, prostate, lung, ovarian, colorectal, and/or brain cancer or potential for such cancer based upon the determining step and determining that the subject is known to be at risk for such cancer or has such cancer; and administering to the subject an agent for inhibiting interaction of an activating ligand with the portion of the MUC1 cell surface receptor that remains at the cell surface resulting from cleavage and that interacts with the activating ligand to promote cell proliferation, the portion comprising MGFR and comprising at least 12 contiguous amino acids from the sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

210. (Withdrawn) The method of claim 209, wherein the agent is selected for use in the method by determining its ability to bind to a significant portion of the peptide, GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

211. (Withdrawn) The method of claim 209, wherein the agent is selected for use in the method by determining its ability to bind to a significant portion of the peptide sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVS.

212-214. (Canceled)

215. (Withdrawn) A method of diagnosing MUC1 positive breast, prostate, lung, ovarian, colorectal, and/or brain cancer or the risk of such cancer in a subject and treating the subject to reduce the risk of or progression of such cancer, comprising:

determining an amount of cleavage of a MUC1 cell surface receptor interchain binding region from a cell surface and/or determining an amount of a portion of the MUC1 cell surface receptor remaining at the surface resulting from such cleavage and accessible to interaction with external agents;

evaluating indication of MUC1 positive breast, prostate, lung, ovarian, colorectal, and/or brain cancer or the potential for such cancer based upon the determining step and determining that the subject is known to be at risk for such cancer or has such cancer; and

administering to the subject an agent for inhibiting dimerization of the portion of the MUC1 cell surface receptor that remains at the cell surface resulting from cleavage and that interacts with the activating ligand to promote cell proliferation, the portion comprising MGFR and comprising at least 12 contiguous amino acids from the sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

216. (Withdrawn) The method of claim 215, wherein the agent is selected for use in the method by determining its ability to bind to a significant portion of the peptide, GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

217. (Withdrawn) The method of claim 215, wherein the agent is selected for use in the method by determining its ability to bind to a significant portion of the peptide sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVS.

218-219. (Canceled)

220. (Withdrawn) A method of diagnosing MUC1 positive breast, prostate, lung, ovarian, colorectal, and/or brain cancer or the risk of such cancer in a subject comprising:

determining an amount of cleavage of a MUC1 cell surface receptor interchain binding region from a cell surface and/or determining an amount of a portion of the MUC1 cell surface

receptor remaining at the surface resulting from such cleavage and accessible to interaction with external agents;

evaluating indication of MUC1 positive breast, prostate, lung, ovarian, colorectal, and/or brain cancer or the potential for such cancer based upon the determining step and determining that the subject is known to be at risk for such cancer or has such cancer

wherein the portion comprises MGFR and comprises at least 12 contiguous amino acids from the sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

221. (Canceled)

222. (Withdrawn) The method of claim 158, wherein MGFR comprises at least 12 contiguous amino acids from the sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

223. (Withdrawn) The method of claim 158, wherein MGFR comprises at least 12 contiguous amino acids from the peptide sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVS.

224. (Withdrawn) A method comprising:

determining a first amount of cleavage of at least a portion of a cell surface receptor from a cell surface of a sample from a subject;

determining a second amount of cleavage of at least a portion of a cell surface receptor from a cell surface of a sample from the subject;

comparing the first amount to the second amount.

225. (New) The kit according to claim 3, wherein the activating ligand is capable of interacting with the MGFR on MUC1 cancer cells to effect inductive multimerization and cell proliferation.

226. (New) The kit according to claim 1, wherein the activating ligand is 14-3-3 protein, cathepsin D protein, or NM23 protein.

227. (New) The kit according to claim 3, wherein the MGFR sequence comprises PSMGFR.

228. (New) The kit according to claim 3, wherein the MGFR sequence comprises at least 12 contiguous amino acids from the sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVSDVPFPFSAQSGA.

229. (New) The kit according to claim 3, wherein the MGFR sequence comprises at least 12 contiguous amino acids from the sequence GTINVHDVETQFNQYKTEAASPYNLTISDVSVS.

230. (New) The kit according to claim 1, wherein the article is a colloid particle.

231. (New) The kit according to claim 230, wherein the colloid is a gold colloid.

232. (New) The kit according to claim 1, wherein the peptide is adapted to be fastened to the article by an affinity tag attached to the peptide.

233. (New) The kit according to claim 232, wherein the affinity tag is polyamino acid tag, polyhistidine tag, GST tag, biotin, or thioredoxin.

234. (New) The kit according to claim 232, wherein the affinity tag is fastened to the C-terminus of the portion of the peptide.

235. (New) The kit according to claim 234, further comprising the activating ligand.

236. (New) The kit according to claim 235, wherein the activating ligand is NM23.